CS Web Portal – Finding a Framework

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Overview

- CS Student Web Portal
  - Developed on and maintained by sophomore class
    - Each new year will add-on and maintain
  - Used by entire CS Department
    - Students
      - Handing in assignments, viewing class data
    - Professors
      - Building class pages, communicating with students
    - Teachers Assistants
      - Grading Assignments
Finding optimal portal framework that accomplishes two key objectives:

- Extensible and easy enough to use that sophomore students can develop within framework and learn good principles while doing so
- Feature set that is ideal for a university student portal
What is a Web Portal?

- Centralized location of web information
- Personalized to a user's needs
- Community Interaction
- Content aggregation from different sources
- Broad range of resources and services
  - Single sign-on, navigation, message boards, user management, search, links
Examples of Portals

- Google, Yahoo, CNET.com, My.Utah.edu
Motivation for CS Portal

- Development opportunity for sophomores
  - Team environment
  - Develop on existing code-base
  - Long life-cycle

- Benefit users
  - Simplify making class web pages
  - Easy for students to navigate
What is a Portal Framework?

- Infrastructure that portal is built on top of
  - Set of technical specifications and software
  - Portal Server with interfaces for customization
- Often provides core set of reusable components
- Support for personalization and single sign-on
- Modular and extensible
- Integration Support
## Existing Portal Frameworks

<table>
<thead>
<tr>
<th>Portal Framework</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liferay 3.6.1</td>
<td><a href="http://sourceforge.net/projects/lportal">http://sourceforge.net/projects/lportal</a></td>
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<tr>
<td>Microsoft Sharepoint</td>
<td><a href="http://www.microsoft.com/.../sharepoint/default.mspx">http://www.microsoft.com/.../sharepoint/default.mspx</a></td>
</tr>
</tbody>
</table>
Portal Architecture

- Databases (SQL)
- Other Servers
- Portal Framework
- Web Server (Apache)
- Visitors
- Members
- Admins
Effort Details

- Selecting Frameworks
  - Select top four frameworks to build sample portals

- Designing a sample portal
  - Serve as proof-of-concept

- Constructing Portals
  - Develop sample portal in each framework

- Finalize Thesis
Selecting Frameworks

- After researching existing portal frameworks, select four to build sample portal
- Pick frameworks that leverage different technologies (JAVA, .NET, portlets, etc.)
- Select frameworks best-suited for project
  - Ease-of-Use, Extensibility, Modular
  - Secure
Designing a Sample Portal

- Navigation Box
- Login
- Class Info
- Class Links
- View Assignments
Constructing Portals

- Build sample portal according to design specification in each of the selected portal frameworks
  - Initially install framework and framework container (server)
- Develop and unit test each module
- Black-Box test portal after completion to ensure it is end-user friendly
Finalize Thesis

- Put finishing touches on thesis paper
- Compare/Contrast development experience and feature set of each selected framework
- Make a recommendation based on research and development experience
Related Work

- Naval Postgraduate School – Web Portal Design, Execution and Sustainability for Naval Websites and Web Services
  - Masters thesis to evaluate how portals would work for Navy infrastructure
- Developing a student web portal at the University of Bristol
  - Ongoing project to develop university portal
Related Work Cont.

- Building a university portal, the SCWEIMS experience
  - Selecting best portal software for university portal
- University of Pretoria, Design and Development of an Academic Portal
  - Design and development of an academic portal
- Developing a portal at the University of Georgia
  - Create centralized student web portal
Schedule

<table>
<thead>
<tr>
<th>ID</th>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
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<tr>
<td>1</td>
<td>Research of Existing Portal Framework</td>
<td>48 days?</td>
<td>Wed 3/1/06</td>
<td>Fri 5/5/06</td>
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<tr>
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<td>Wed 5/31/06</td>
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<td>Tue 7/11/06</td>
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<td>Mon 8/21/06</td>
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<td>Tue 8/22/06</td>
<td>Mon 10/2/06</td>
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<td>Mon 11/13/06</td>
</tr>
<tr>
<td>7</td>
<td>Finalize Thesis</td>
<td>15 days?</td>
<td>Tue 11/14/06</td>
<td>Mon 12/4/06</td>
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</tbody>
</table>
Successful End

- Able to determine which framework is best-suited and why
- CS student web portal is launched and students/faculty benefit from it

Questions?